

Claims

1. A hand-held dispenser for dispensing a multiplicity of unit products having a storage area
5 for storing the unit products, an outlet opening through which the unit products are dispensable from the dispenser and a dispensing mechanism adapted to dispense a predetermined number of said unit products through the outlet opening per actuation thereof, the
10 dispenser being adapted such that the dispensing mechanism is actuable by pushing the dispenser into a palm of a user and such that the associated predetermined number of unit products is dispensed into that palm.
- 15
2. The dispenser of claim 1 wherein the dispenser has a dispensing end in which the outlet opening is provided, and the dispensing mechanism has an actuator at the dispensing end engagable by the
20 palm for actuating the dispensing mechanism.
3. The dispenser of claim 2 wherein the actuator is displaceable into the dispenser for actuating the dispensing mechanism.
- 25
4. The dispenser of claim 3 wherein the actuator protrudes from the dispensing end.
5. The dispenser of claim 2, 3 or 4 wherein the
30 actuator is a nozzle which provides the outlet opening.

6. The dispenser of claim 5 wherein the nozzle has a tubular configuration with the outlet opening being provided by the lumen thereof.

5

7. The dispenser of any one of claims 2 to 6 further having a closure which is releasably engageable on the dispensing end to close the outlet opening.

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8. The dispenser of claim 7 wherein when the closure is engaged on the dispensing end the actuator is unable to actuate the dispensing mechanism.

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9. The dispenser of claim 7 or 8 wherein the closure is a cap.

10.

The dispenser of claim 7, 8 or 9 wherein the closure and dispensing end have co-operable

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retaining features.

11. The dispenser of claim 10 wherein the co-operable retaining features are screw thread profiles.

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12. The dispenser of any one of the preceding claims in which the dispensing mechanism has a gate mechanism which, on actuation of the dispensing mechanism, moves from a closed configuration, in which it closes the outlet opening, to an open

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configuration, in which it allows the predetermined

number of unit products to be dispensed from the outlet opening.

13. The dispenser of claim 12 in which the gate
5 mechanism has a biasing structure for biasing the gate mechanism to its closed configuration.

14. The dispenser of claim 12 or 13 wherein when
the dispensing mechanism is actuated the gate
10 mechanism moves to the open configuration to enable the predetermined number of unit products to be dispensed and moves back to the closed configuration behind the dispensed unit products.

15 15. The dispenser of any one of claims 12-14
when appended directly or indirectly on claim 3
wherein the actuator provides at least a part of the gate mechanism.

20 16. The dispenser of claim 15 wherein the gate mechanism has a first part, on the actuator, and a second part, and wherein inward movement of the actuator causes the first part to move relative to the second part and the gate mechanism to move from the
25 closed configuration to the open configuration.

17. The dispenser of claim 16 wherein in the closed configuration the first and second parts cooperate to form a gate across the outlet opening and
30 in the open configuration the gate is opened.

18. The dispenser of claim 17 wherein the first part provides a first section of the gate and the second part provides a second section thereof, inward movement of the actuator causing the first and second
5 sections to be separated to form an aperture through which the predetermined number of unit products are able to pass through.

19. The dispenser of any one of claims 12-18
10 which has an internal channel extending towards the outlet opening in which the unit products are, in use, formed into a queue and the gate mechanism in use selectively opens and closes the channel to enable dispensing of the predetermined number of unit
15 products at the front of the queue.

20. The dispenser of claim 19 when appended directly or indirectly on claim 6 wherein the channel is disposed in the lumen of the nozzle.
20

21. The dispenser of claim 19 or 20 wherein the gate mechanism is adapted such that on actuation it pushes the portion of the queue behind the predetermined number at the front backwards in the
25 channel.

22. The dispenser of claim 21 when appended directly or indirectly on claim 16 wherein the first part of the gate mechanism pushes the queue portion
30 backwards on actuation of the actuator.

23. The dispenser of any one of the preceding claims wherein the storage area is in a first dispenser part and the dispensing mechanism and the outlet opening are in a second dispenser part attached
5 to the first dispenser part.

24. The dispenser of claim 23 in which the first and second dispenser parts are releasably attached.

10 25. The dispenser of claim 23 or 24 in which the first dispenser part has an access opening through which the unit products are transferable from the first dispenser part to the second dispenser part and the closure is releasably engagable with the first
15 dispenser part, when detached from the second dispenser part, to close the access opening.

26. The dispenser of any one of the preceding claims in which the dispensing mechanism is a pump-
20 action dispensing mechanism.

27. The dispenser of any one of the preceding claims in which the predetermined number of unit products is one.
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28. The dispenser of any one of the preceding claims containing the multiplicity of unit products.

29. The dispenser of claim 28 wherein the unit
30 products are pharmaceutical dosage forms.

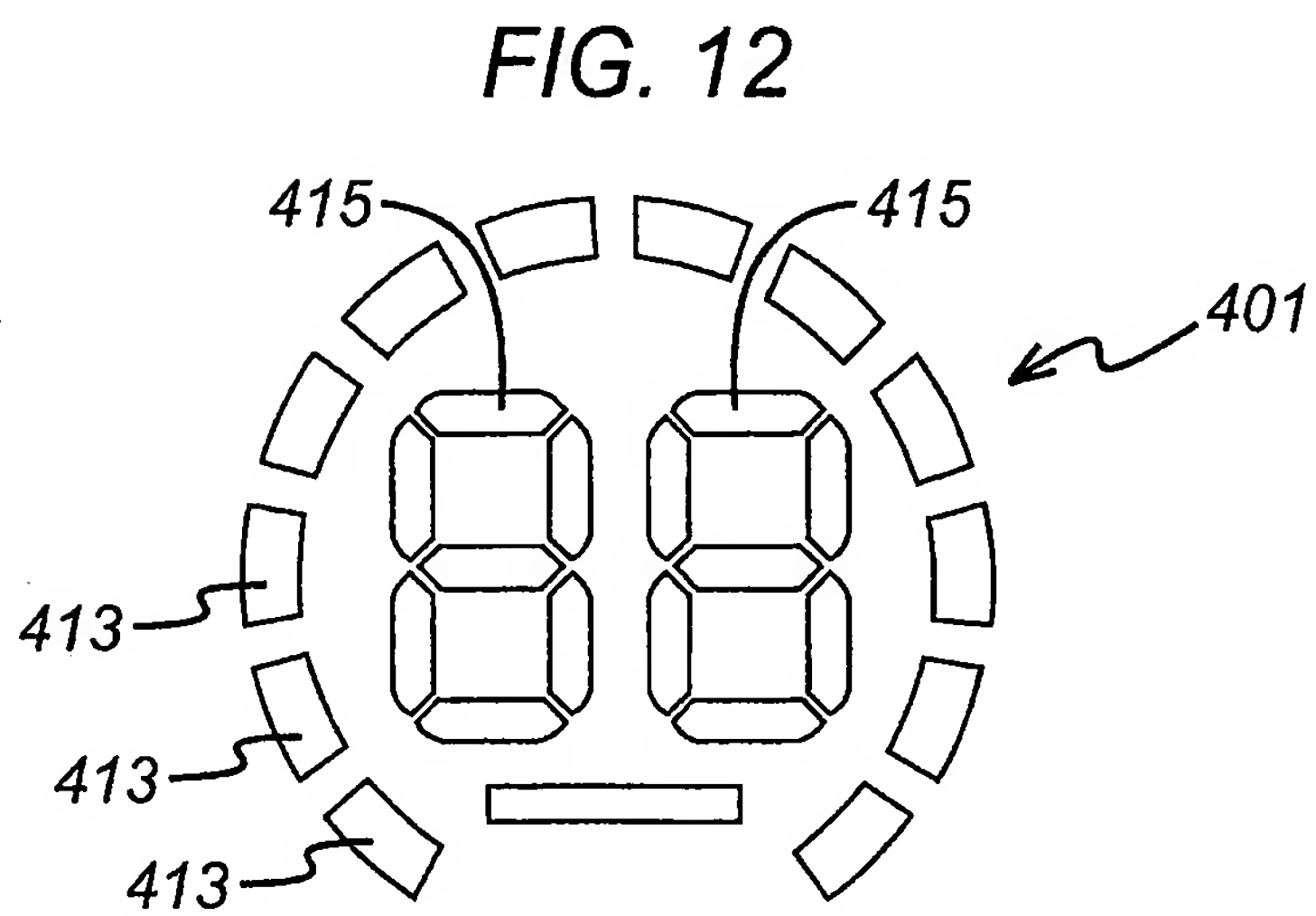
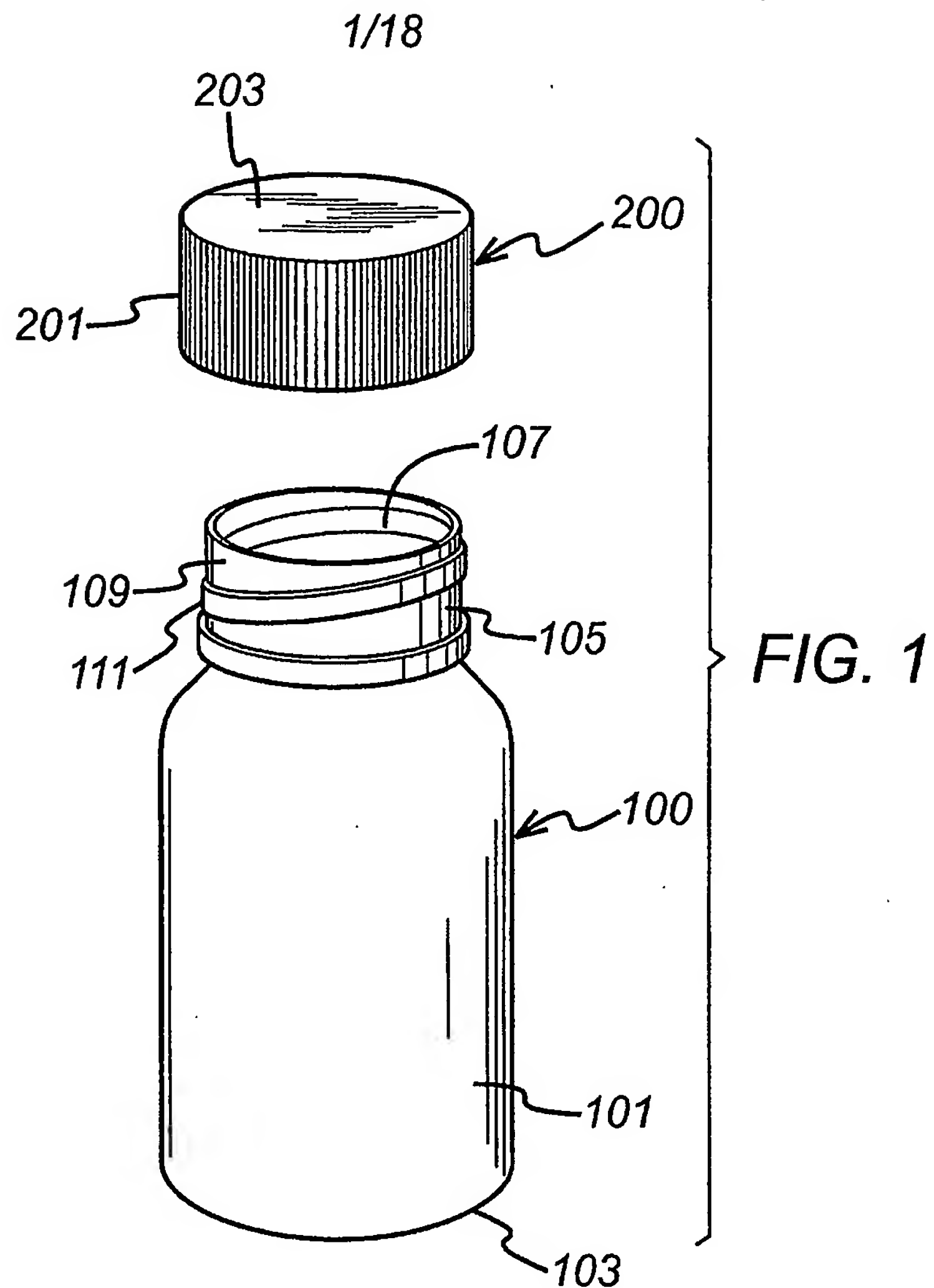
30. The dispenser of claim 28 or 29 wherein the unit products are pills.

31. The dispenser of any one of the preceding
5 claims adapted such that the unit products are gravity-fed to the outlet opening.

32. A dispensing module adapted for attachment
to a container for a multiplicity of unit products in
10 the form of the second dispenser part of claim 23, 24 or 25.

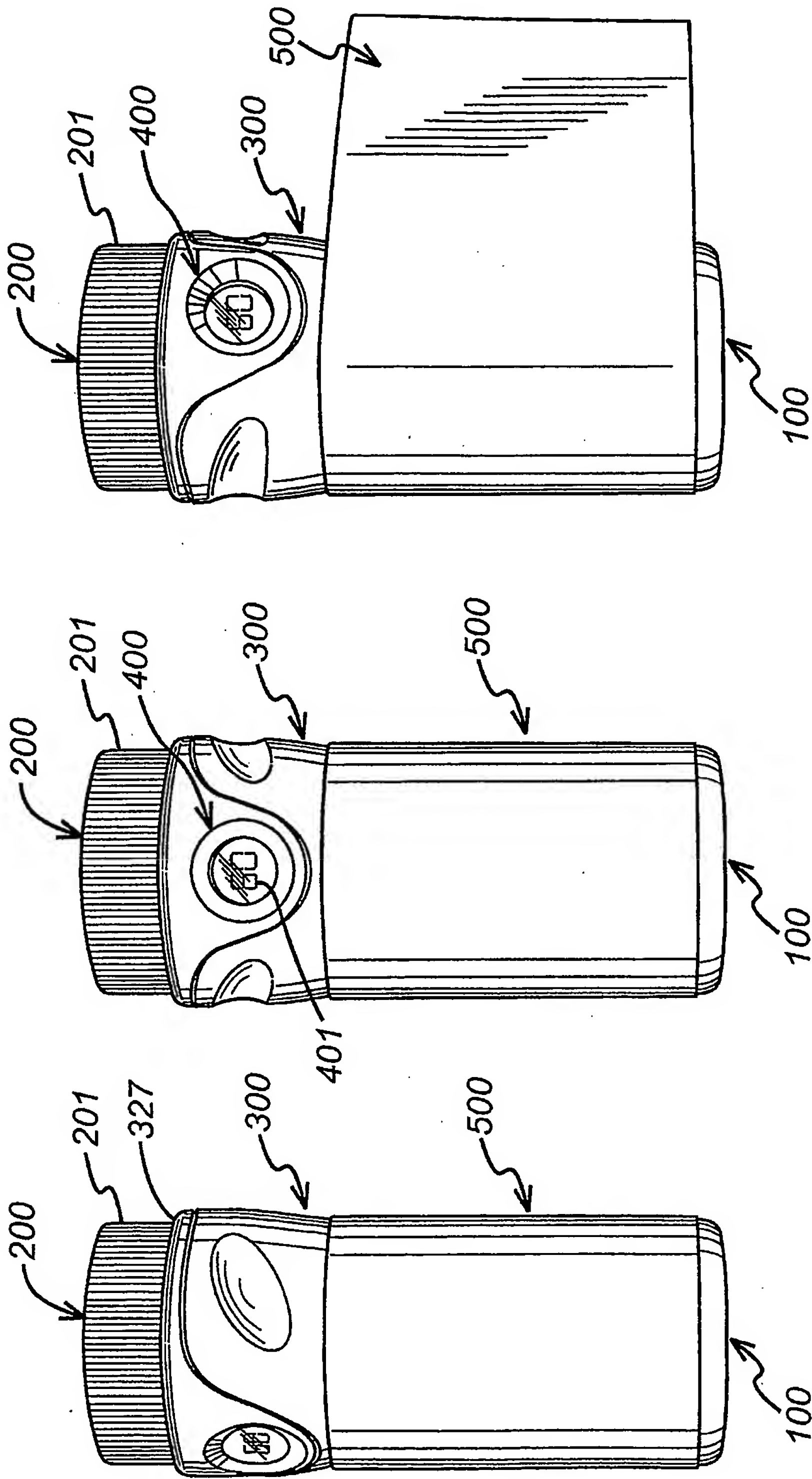
33. A hand-held dispenser for dispensing a
multiplicity of unit products substantially as
15 hereinbefore described with reference to, and as illustrated in, FIGURES 2-12 or FIGURES 13-14 of the accompanying drawings.

34. A dispensing module for attachment to a
20 container for a multiplicity of unit products substantially as hereinbefore described with reference to, and as illustrated in, FIGURES 2-12 or FIGURES 13-14 of the accompanying drawings.



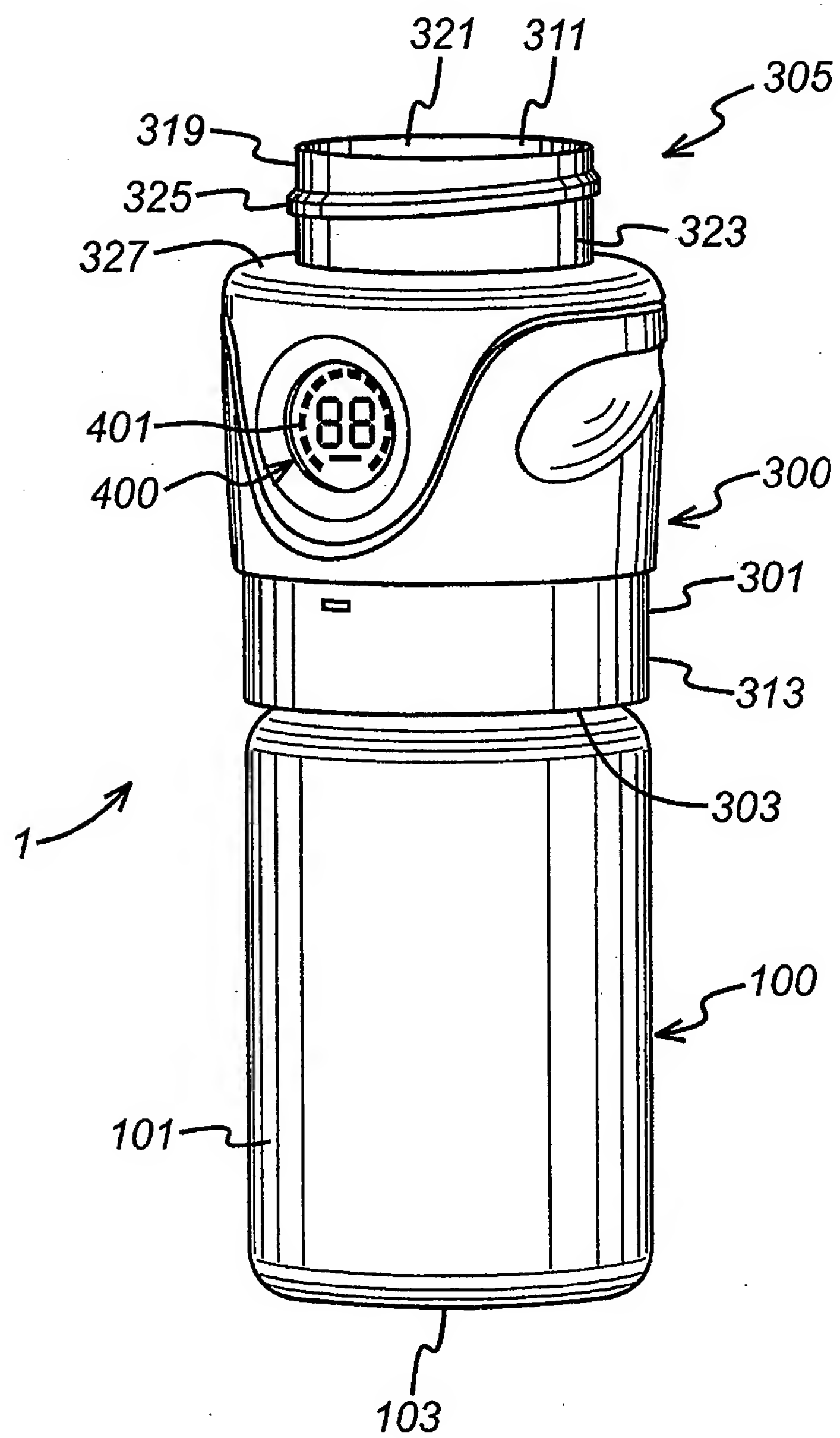
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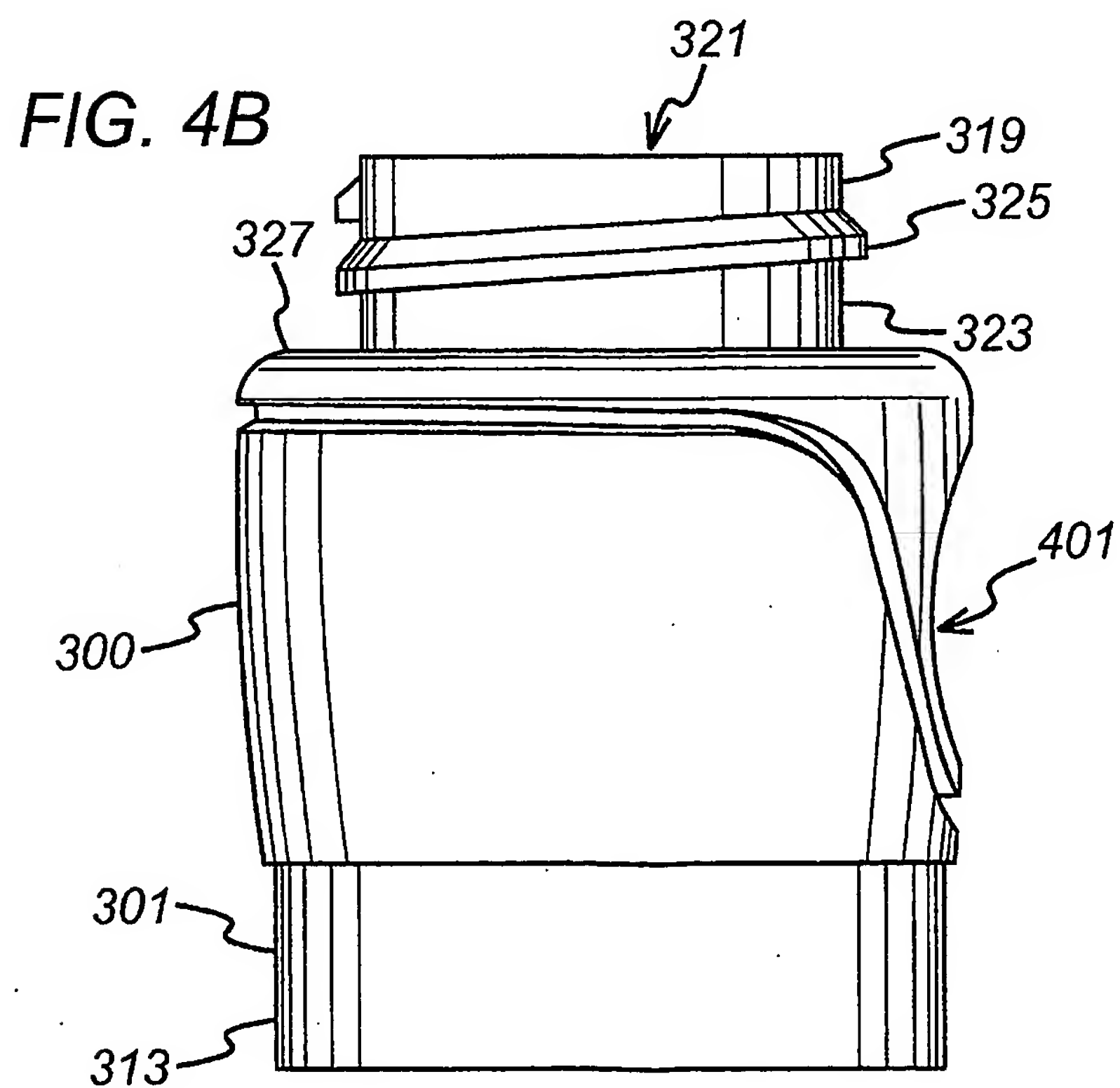
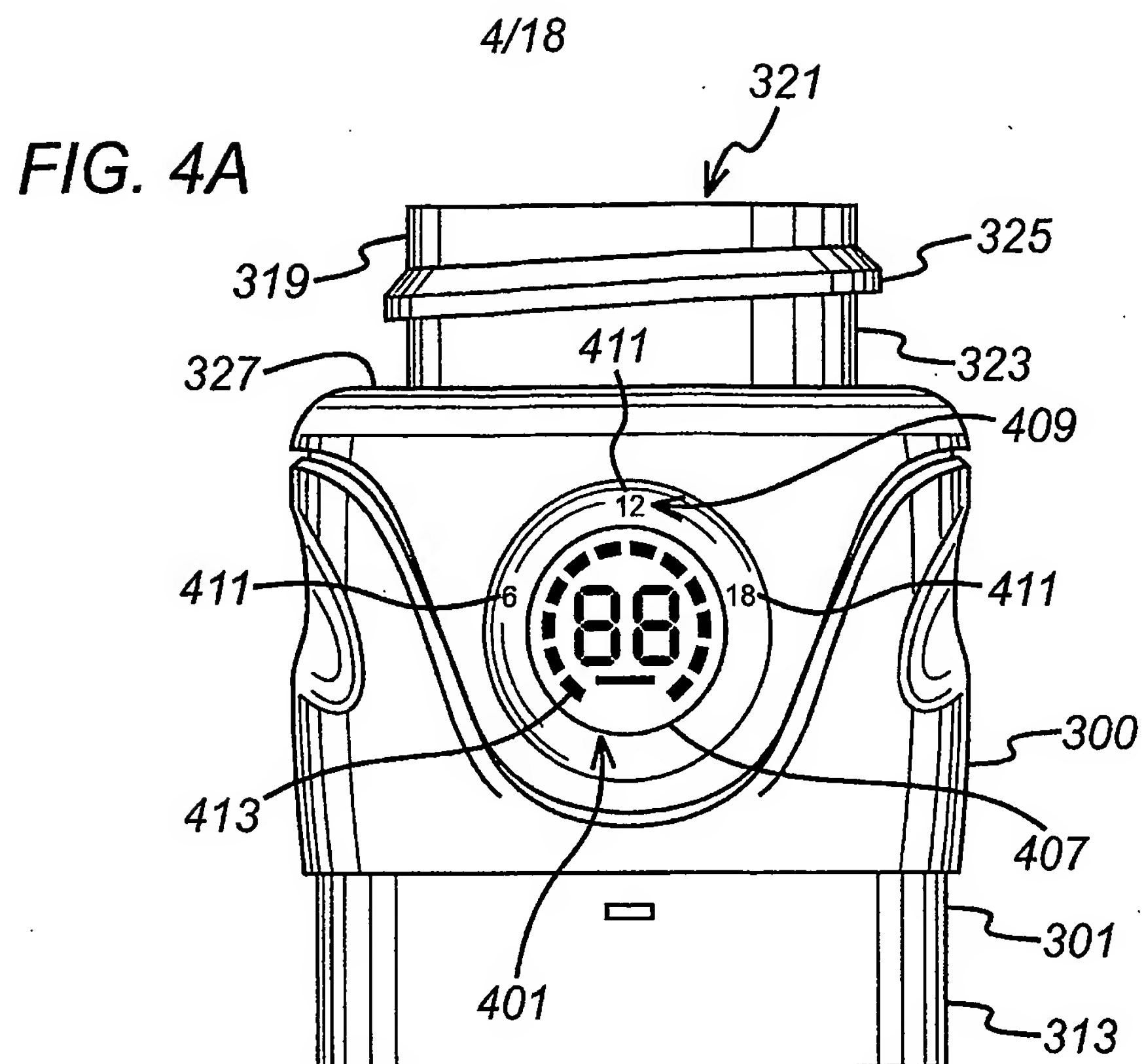
FIG. 2



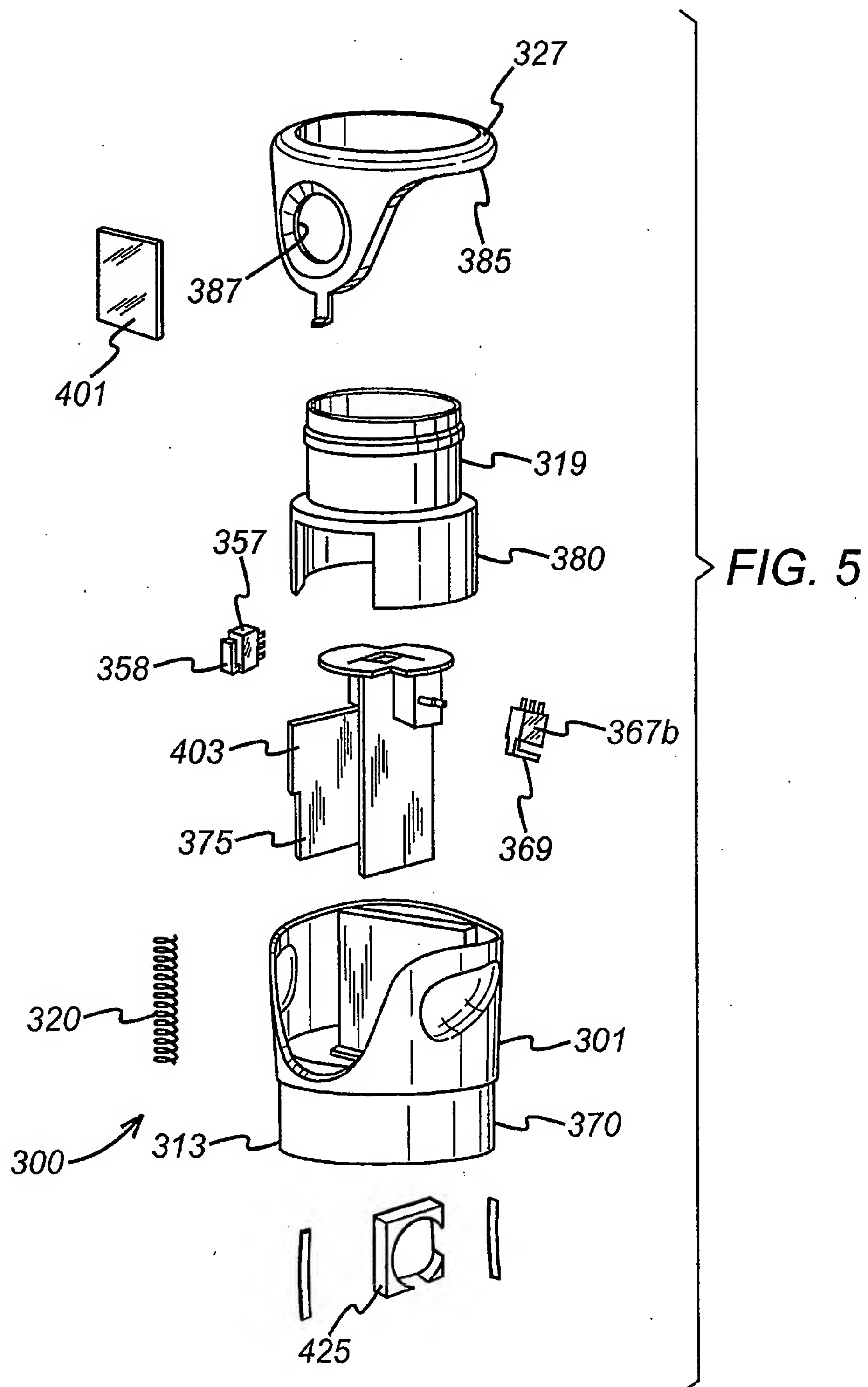
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FIG. 3





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FIG. 6A

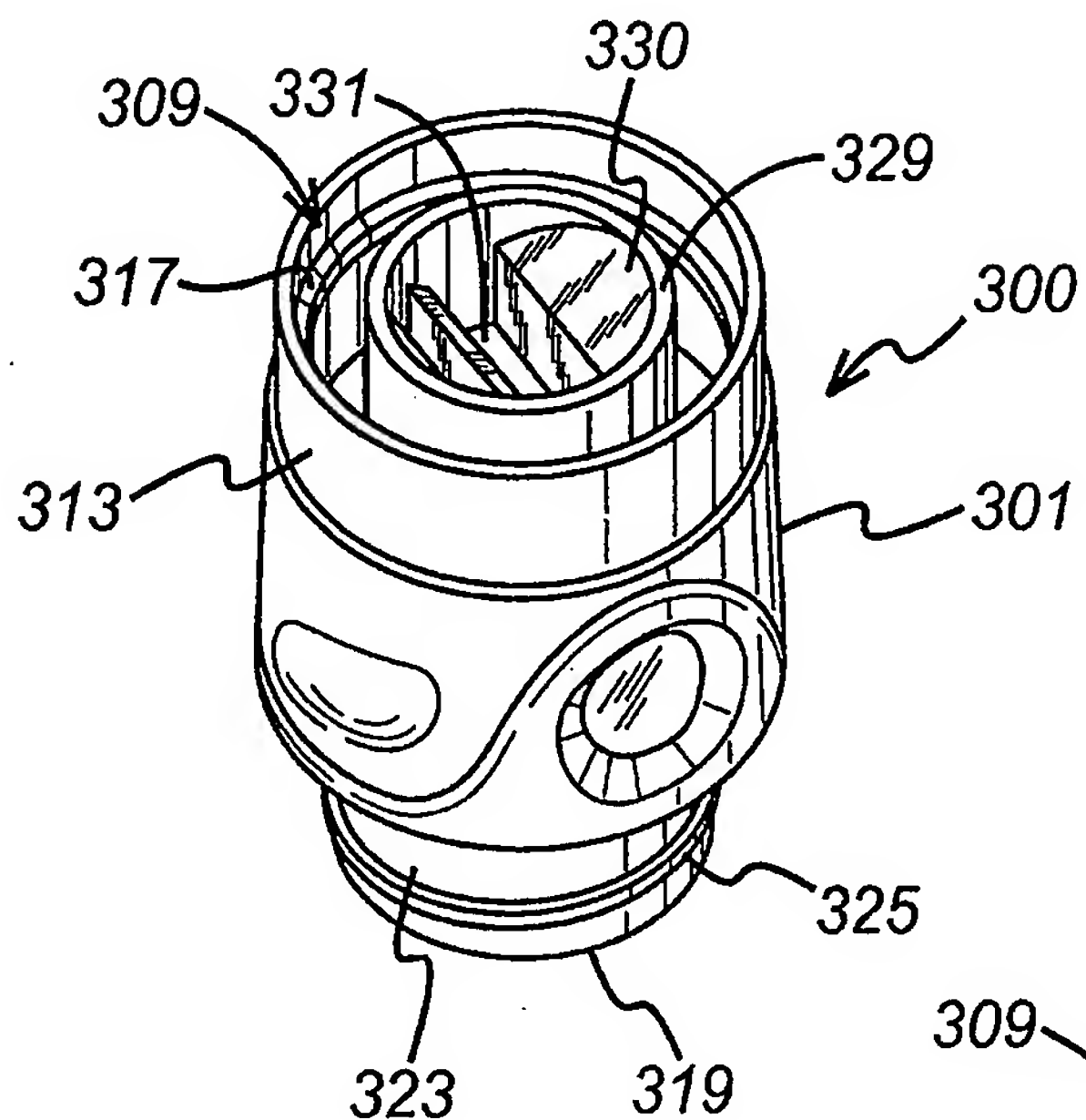


FIG. 6B

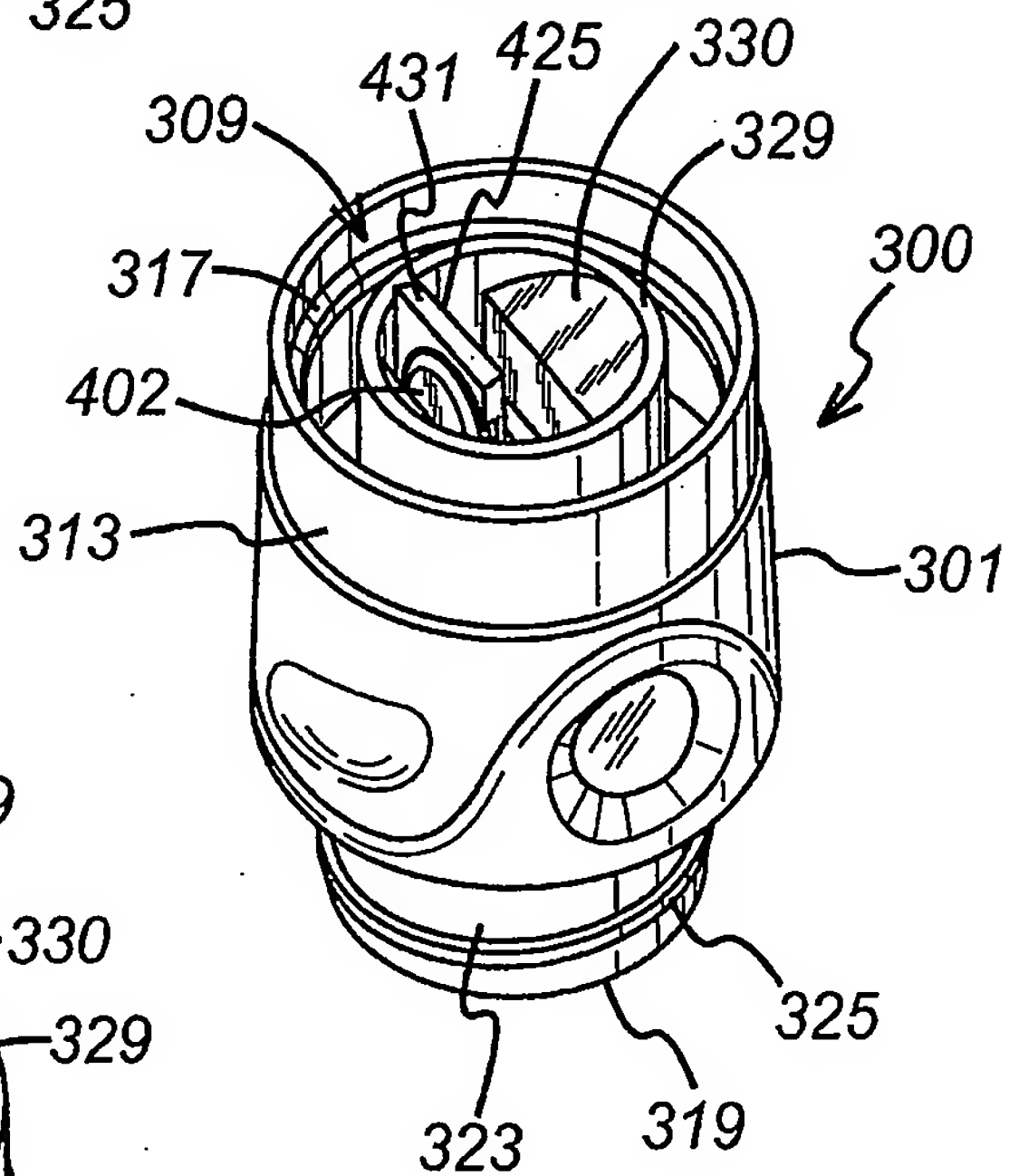
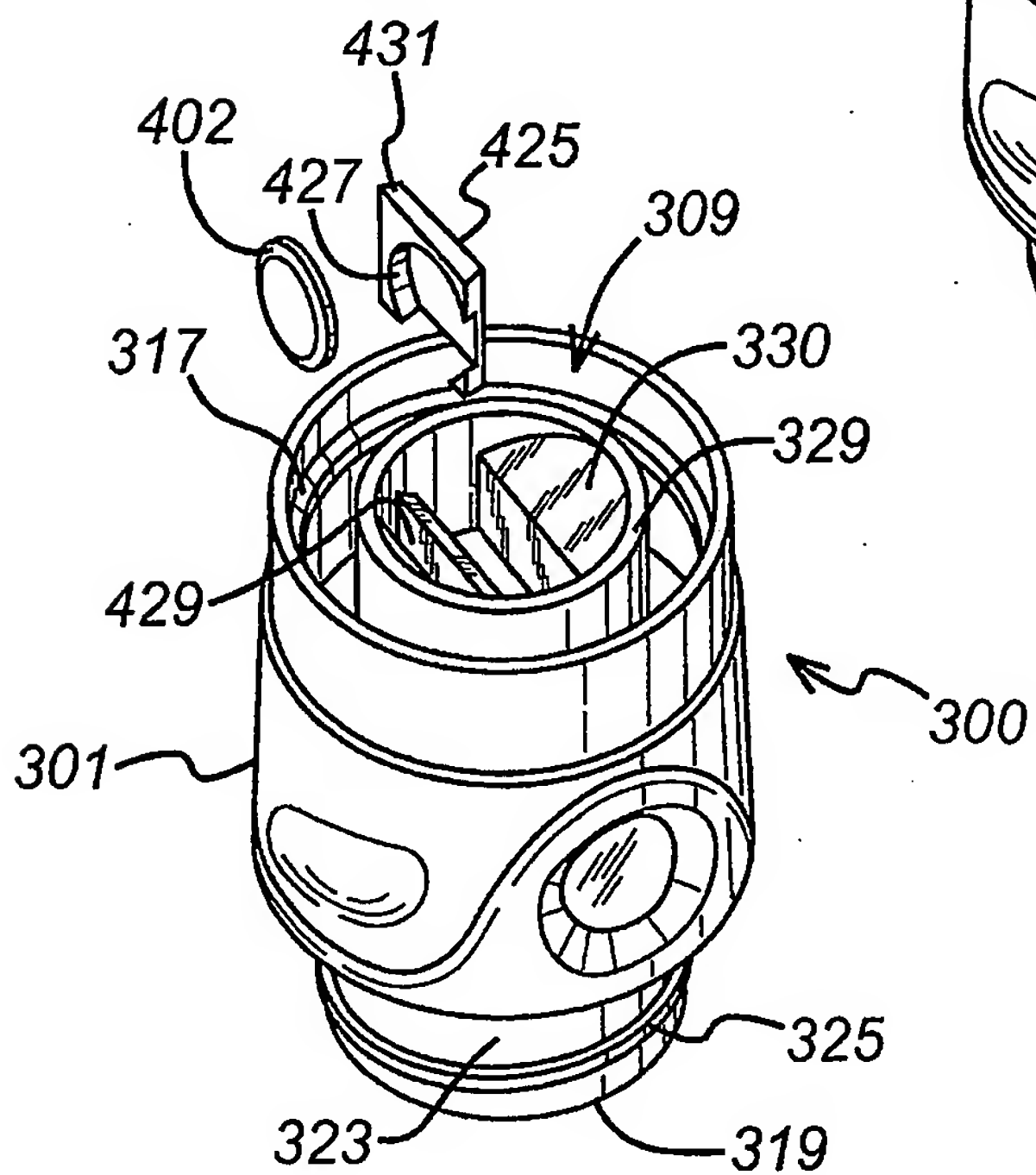


FIG. 6C



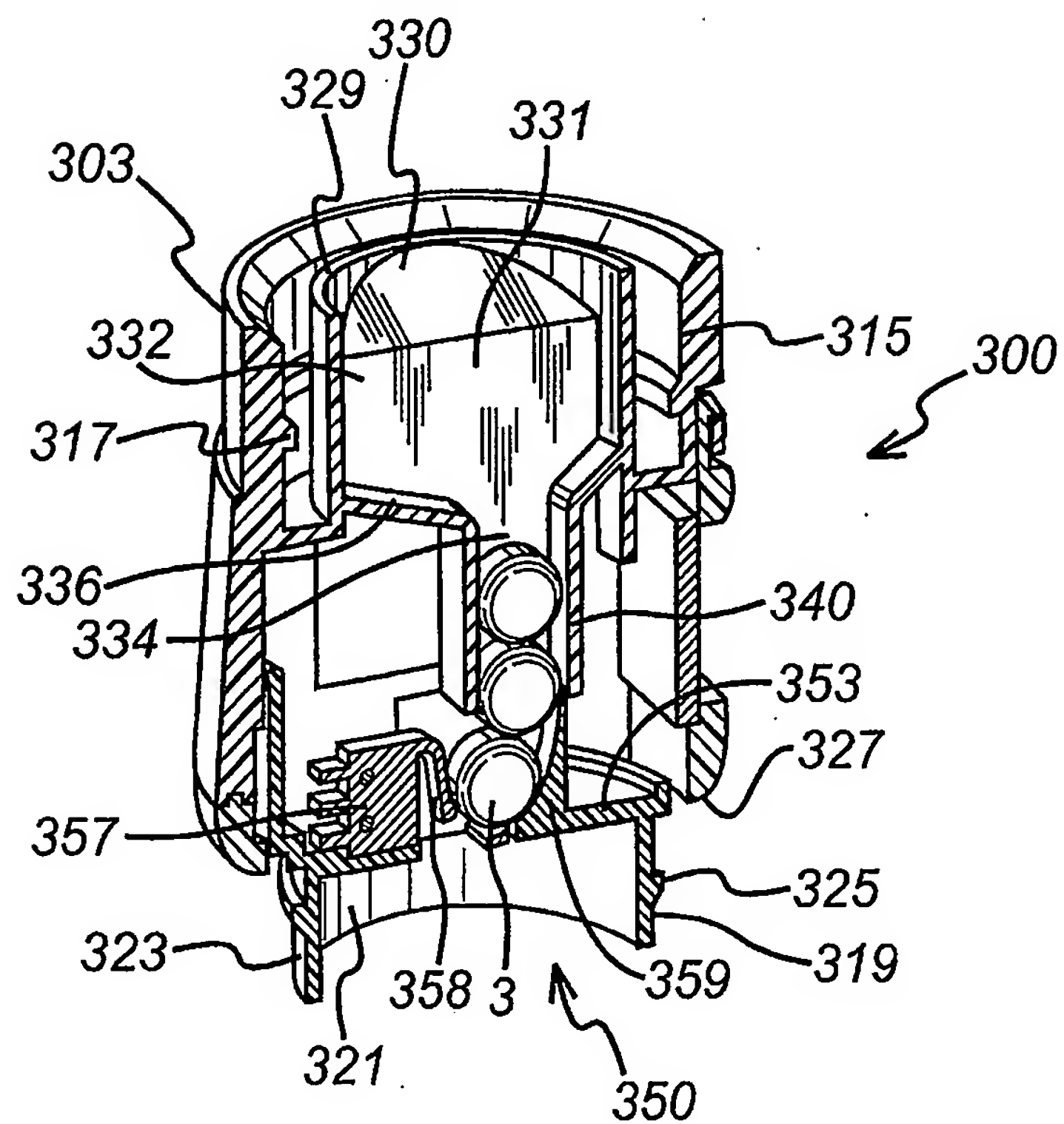
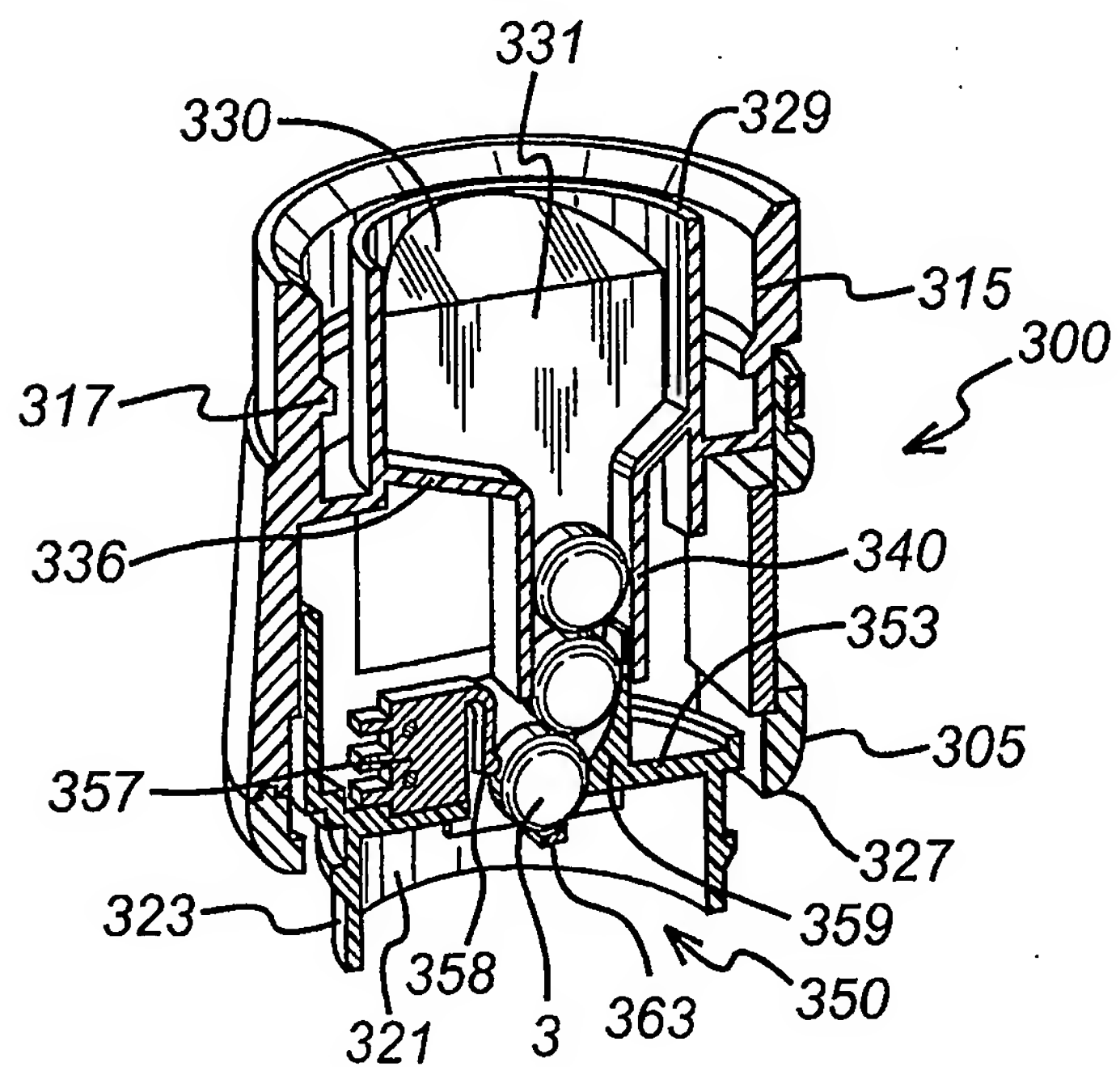
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FIG. 7A

FIG. 7B



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FIG. 7C

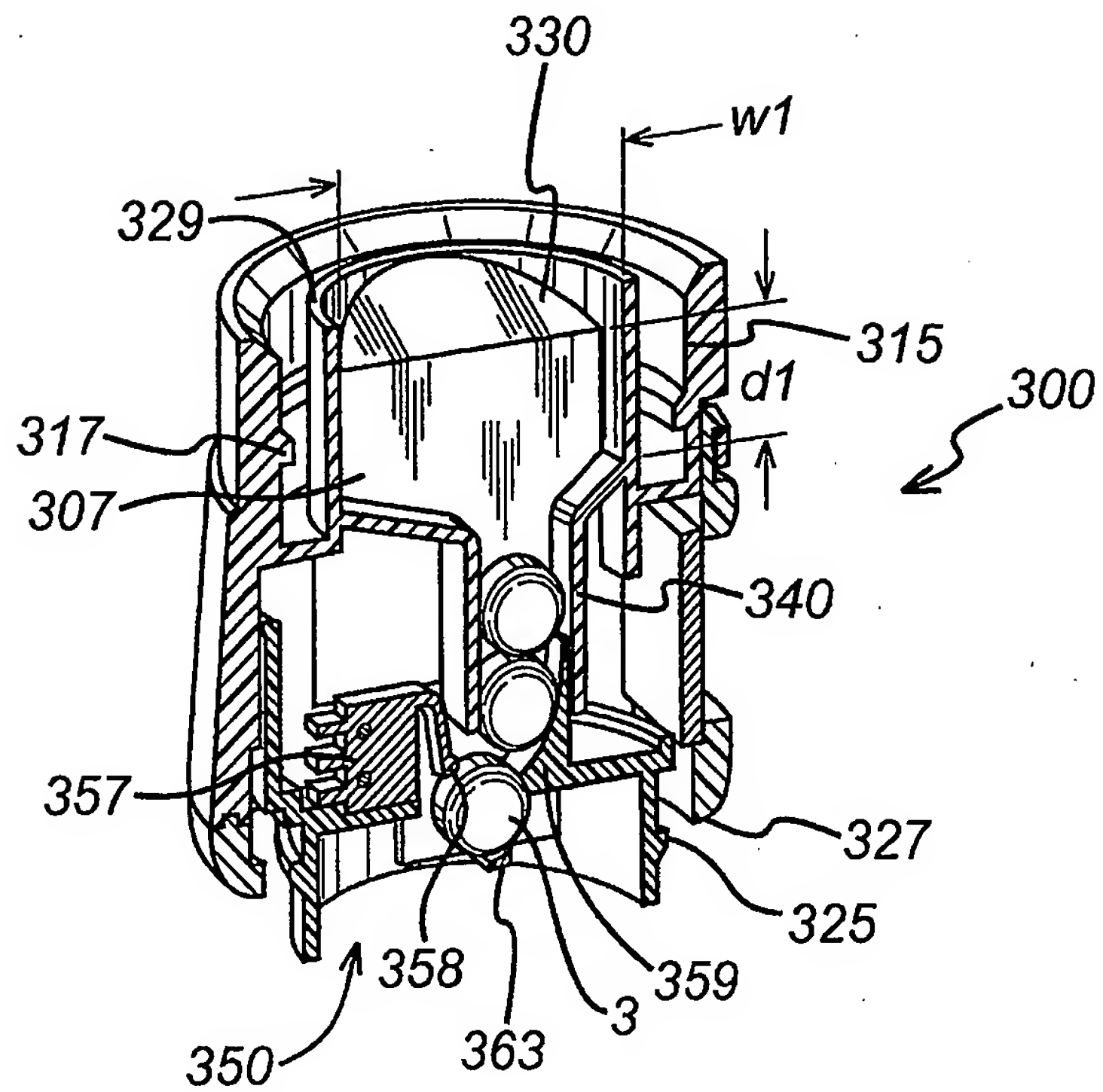
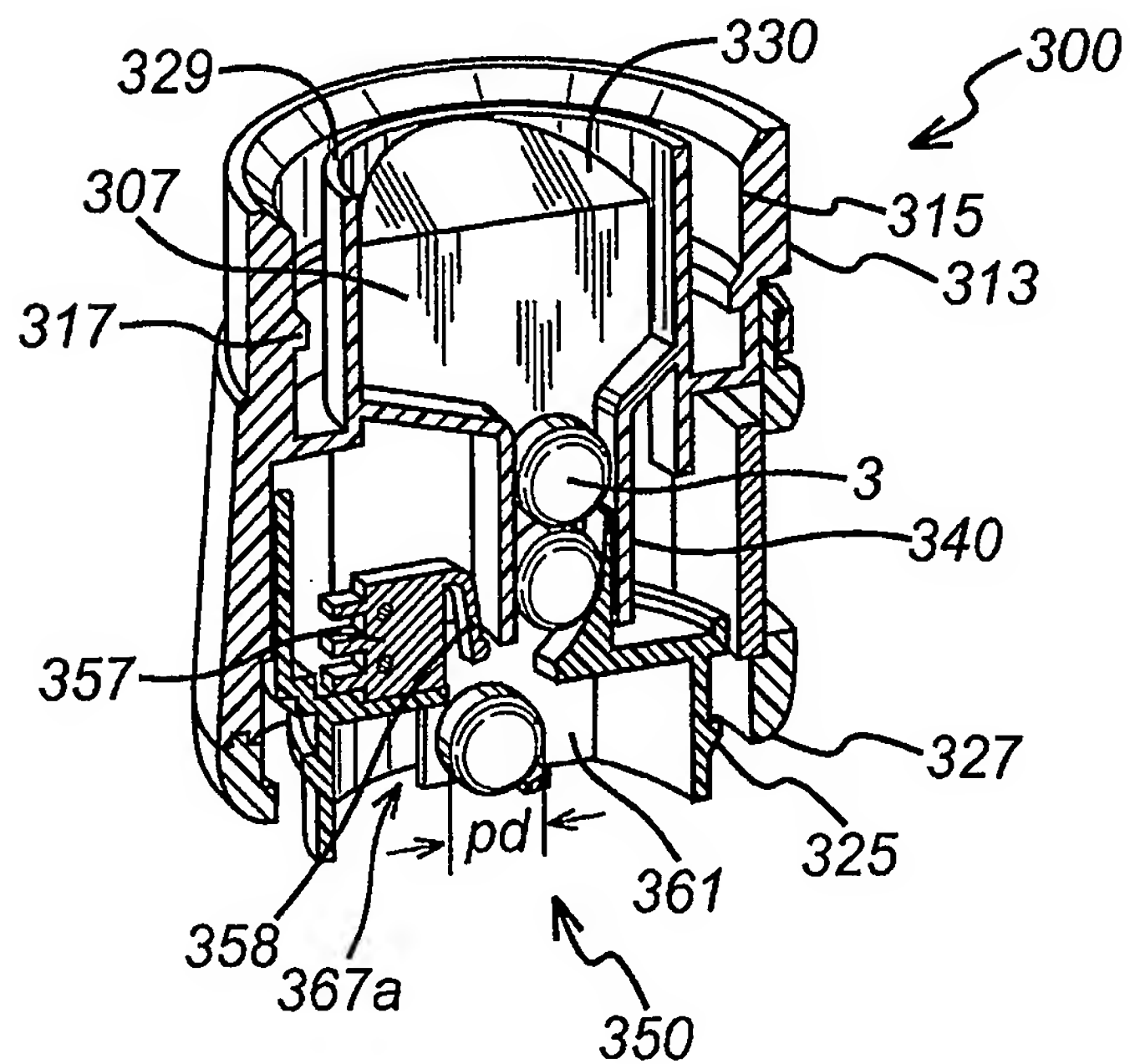
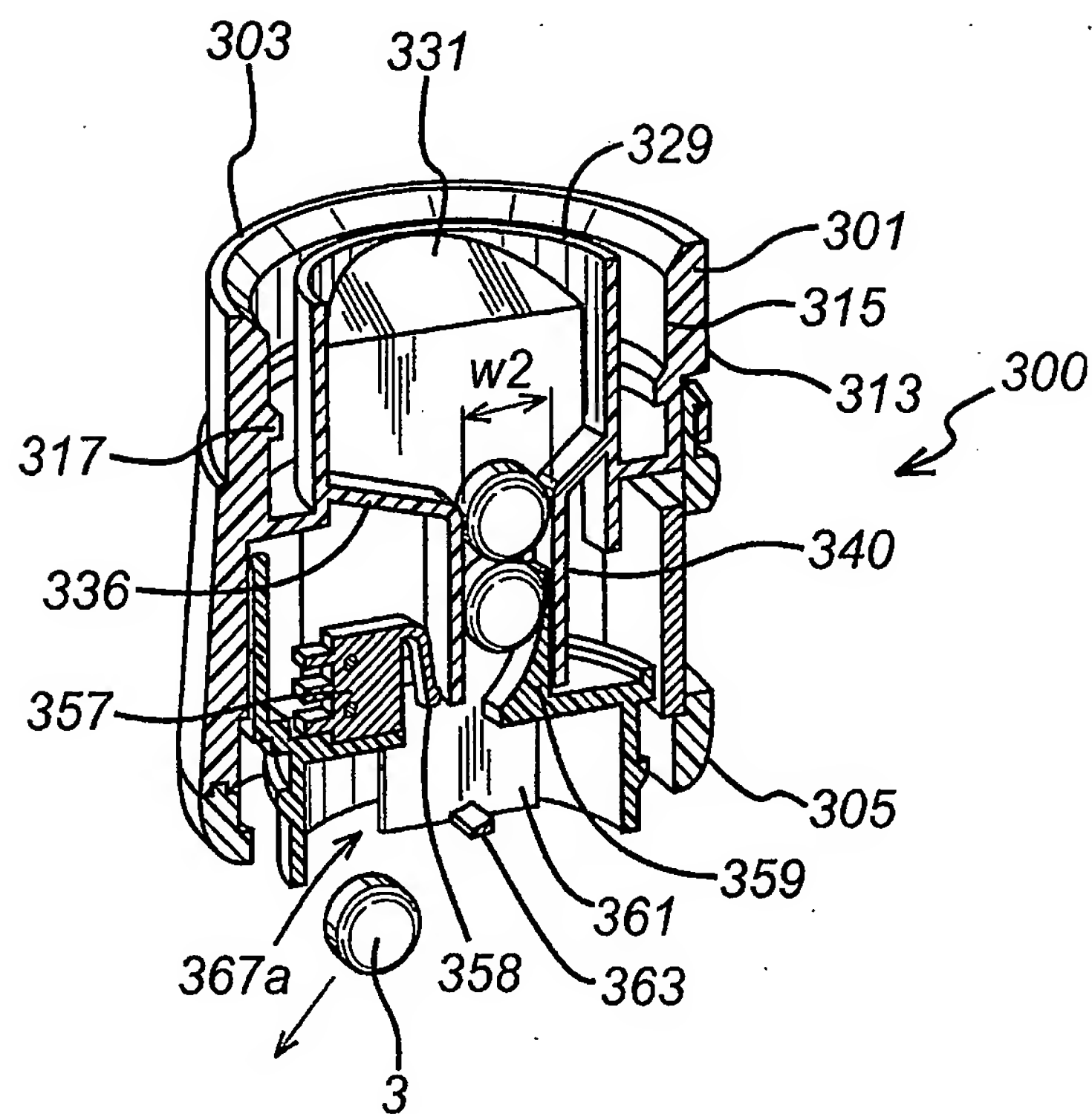


FIG. 7D



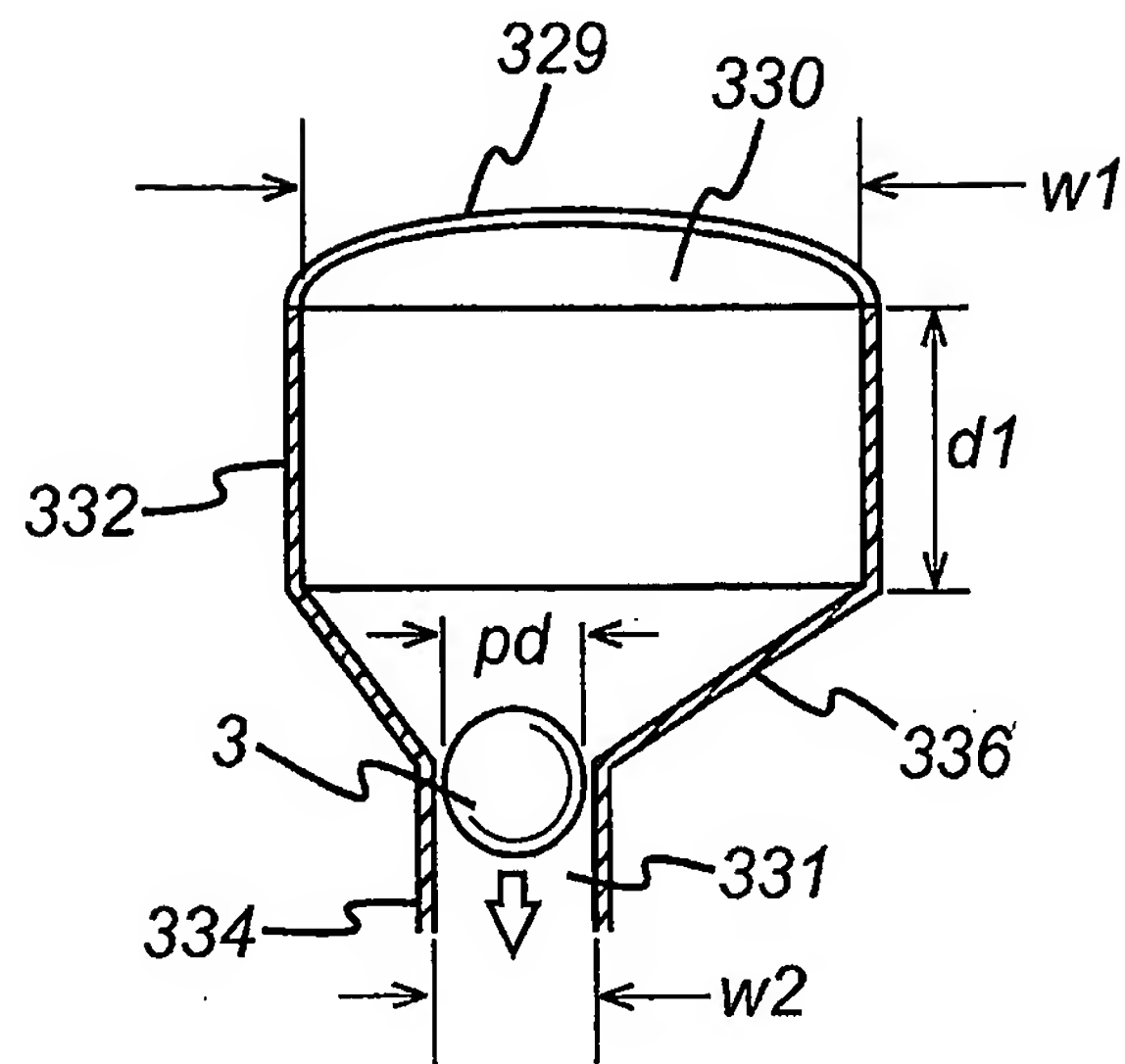
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FIG. 7E



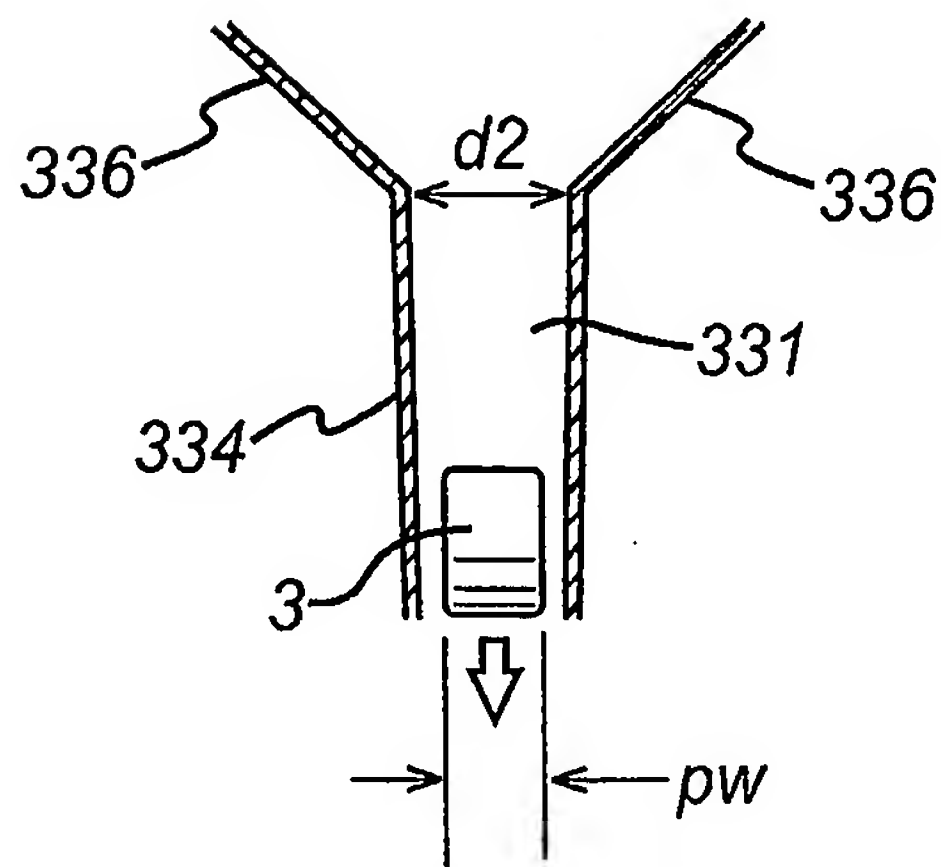
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FIG. 8A



$$\begin{aligned} d1 &> 1.5 \times pd \\ d2 &< pd \\ d2 &> pw \end{aligned}$$

FIG. 8B



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FIG. 9A

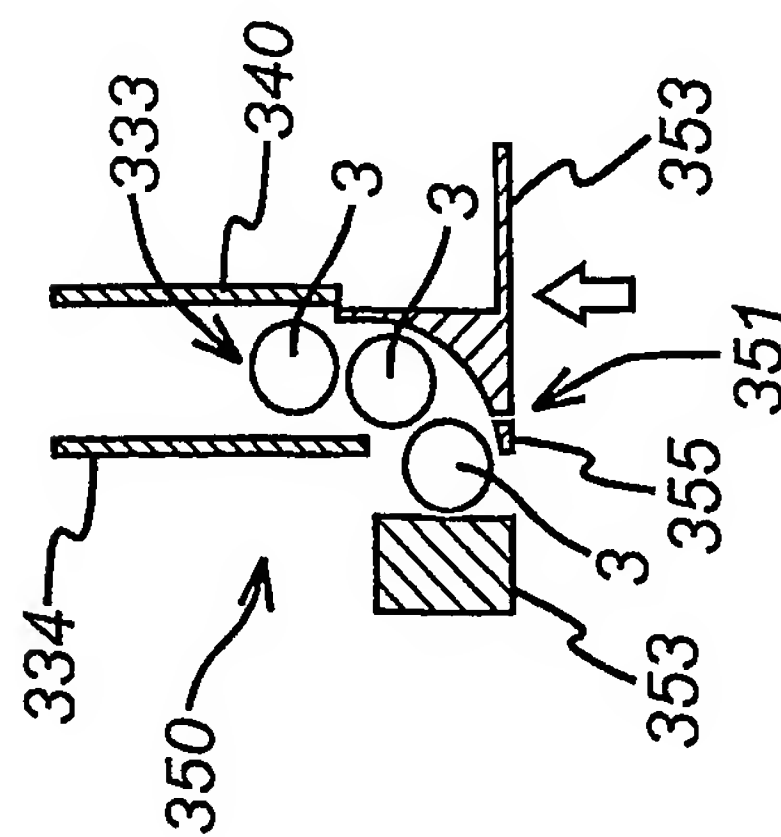


FIG. 9B

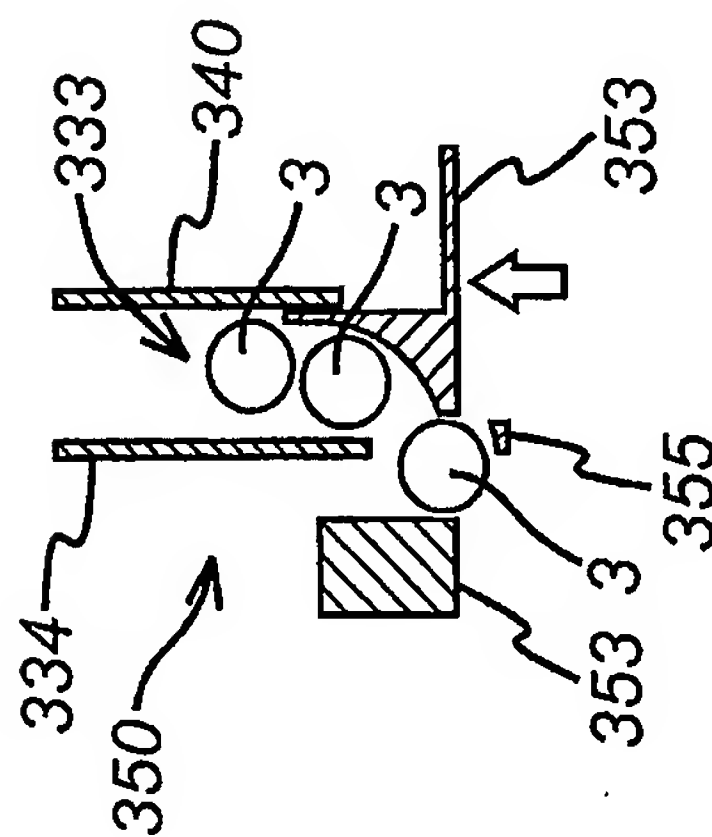
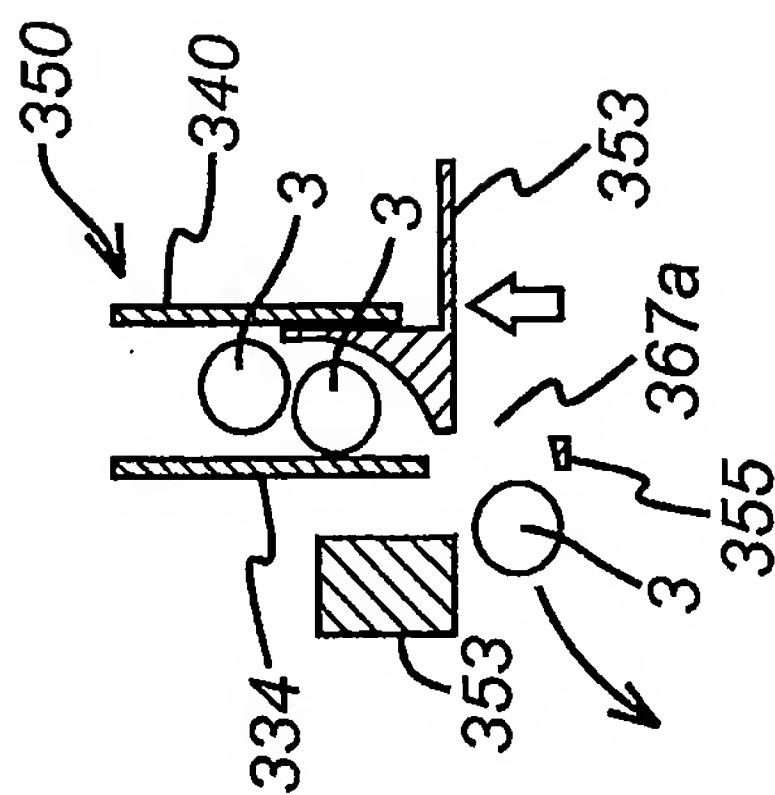


FIG. 9C



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FIG. 10C

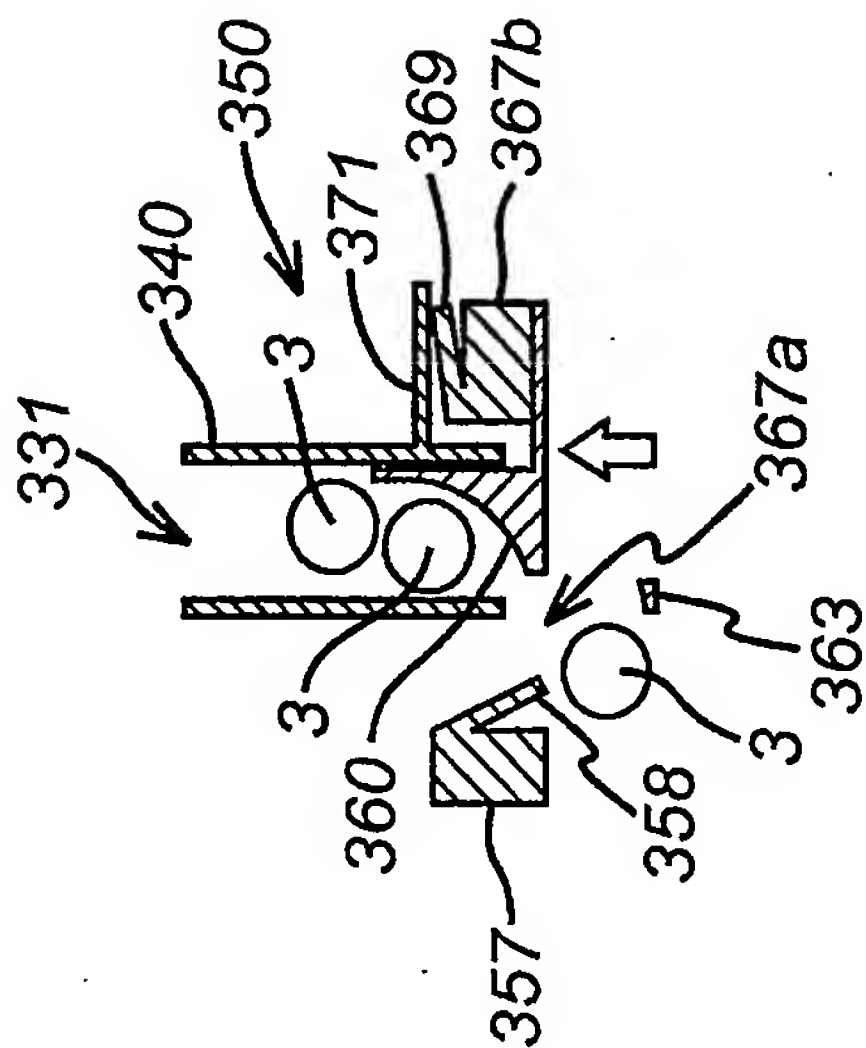


FIG. 10B

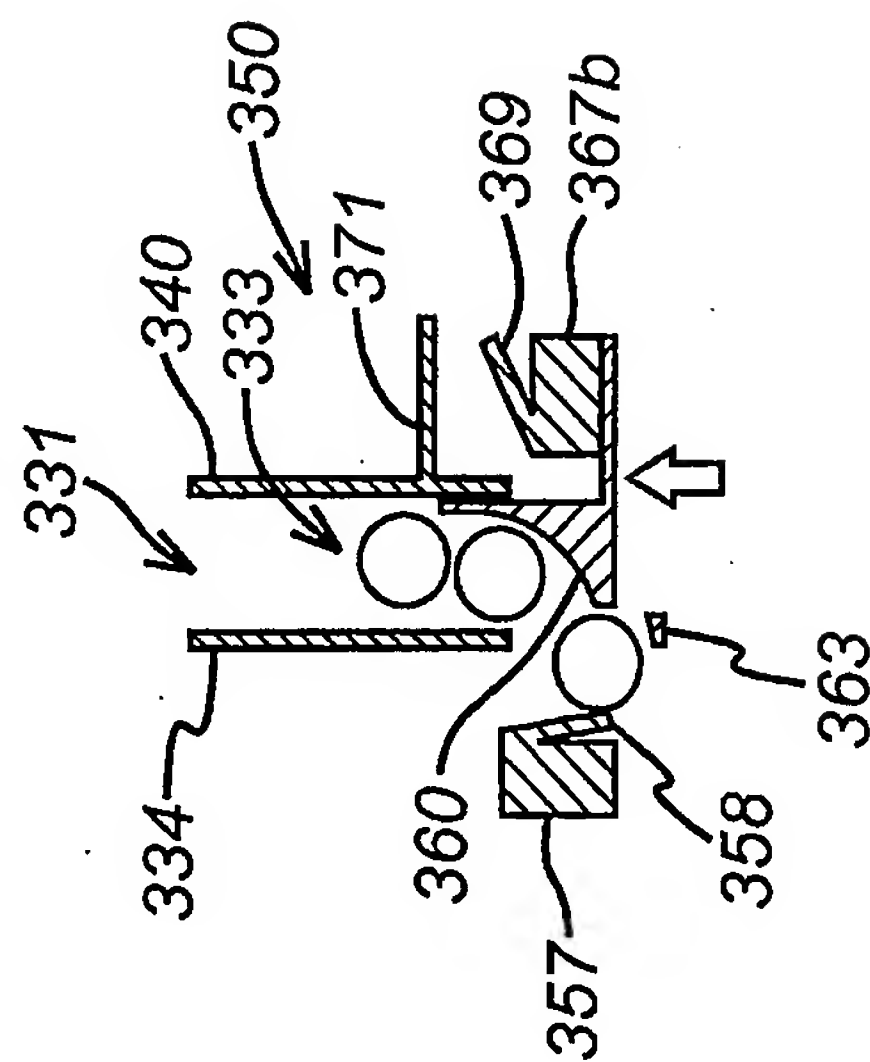
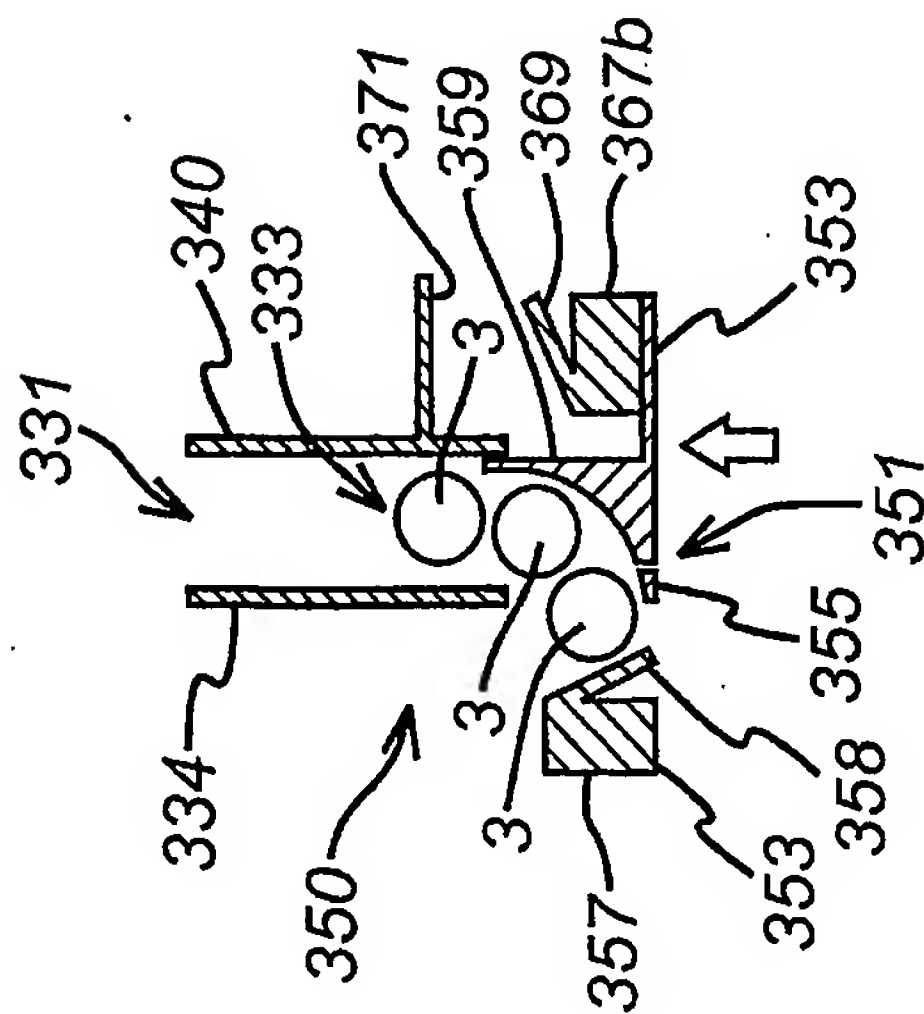
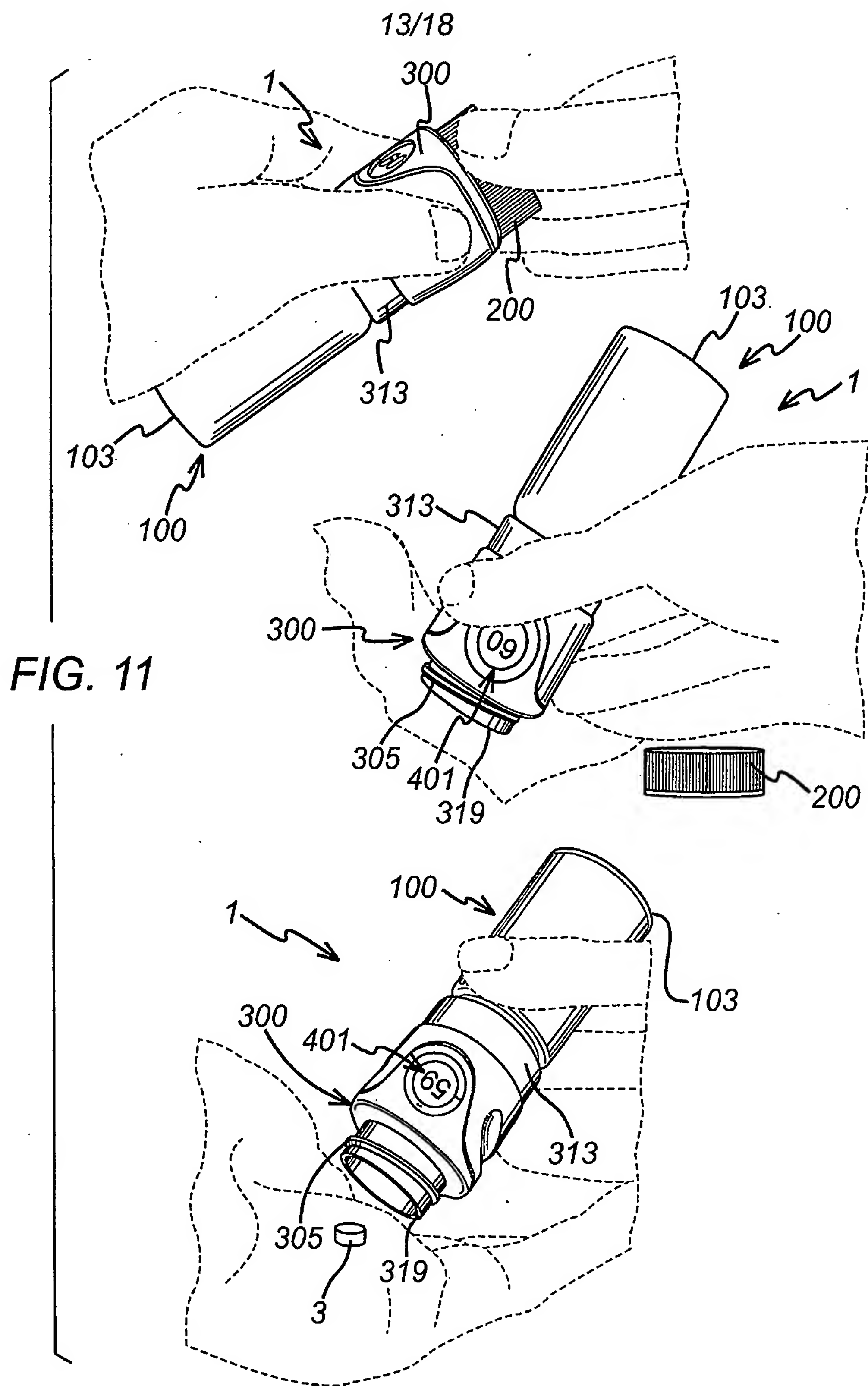


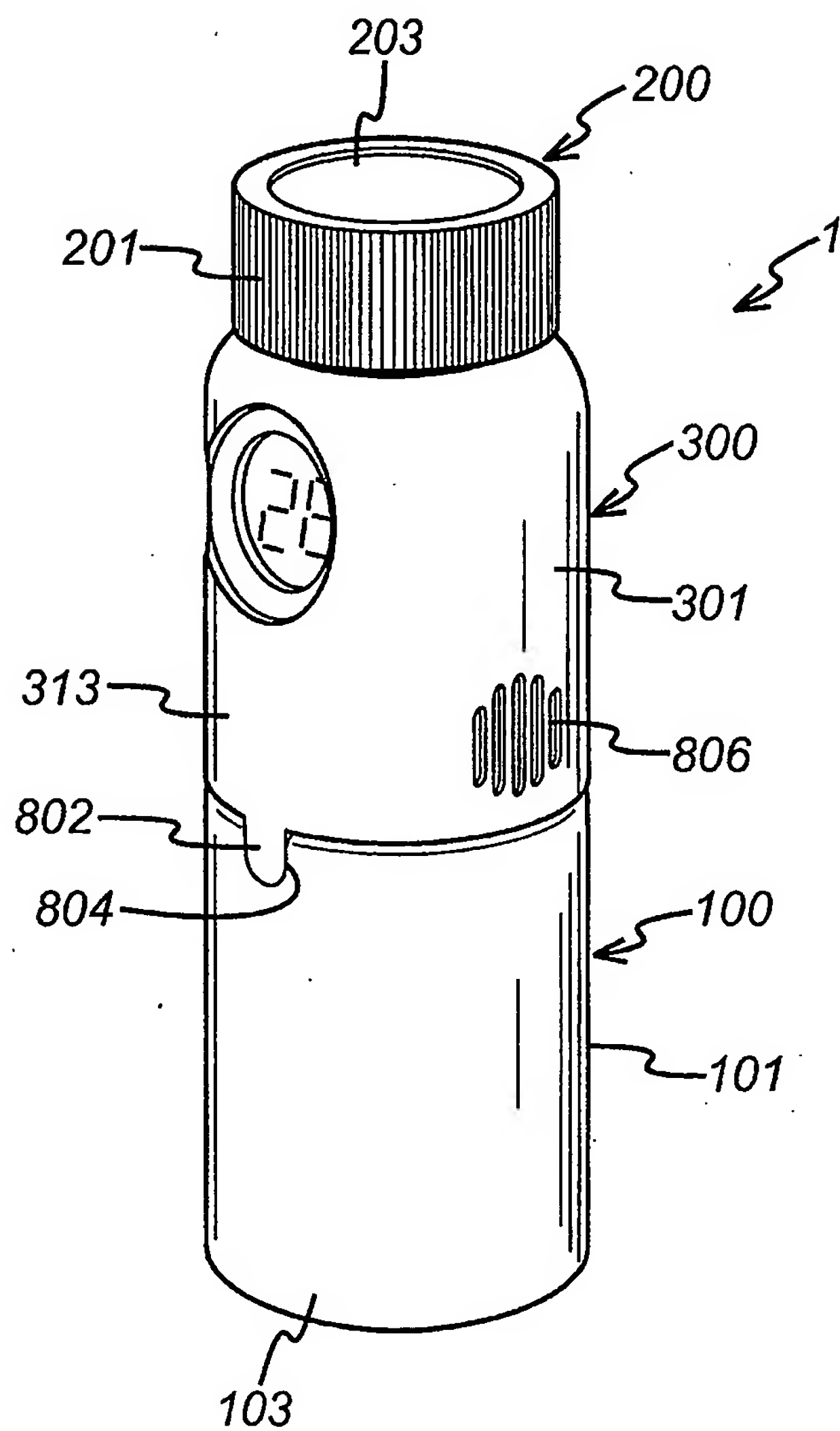
FIG. 10A



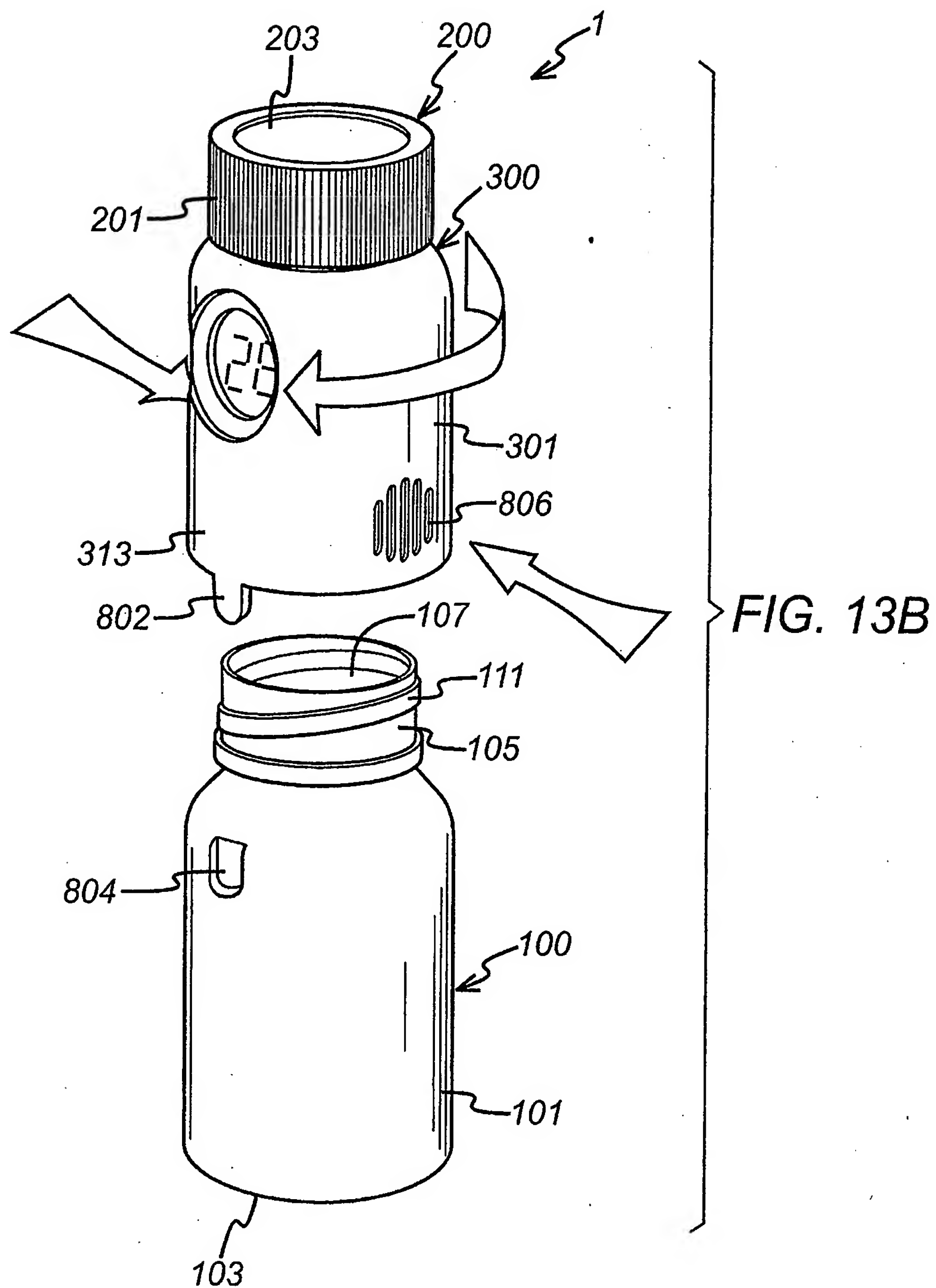


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FIG. 13A



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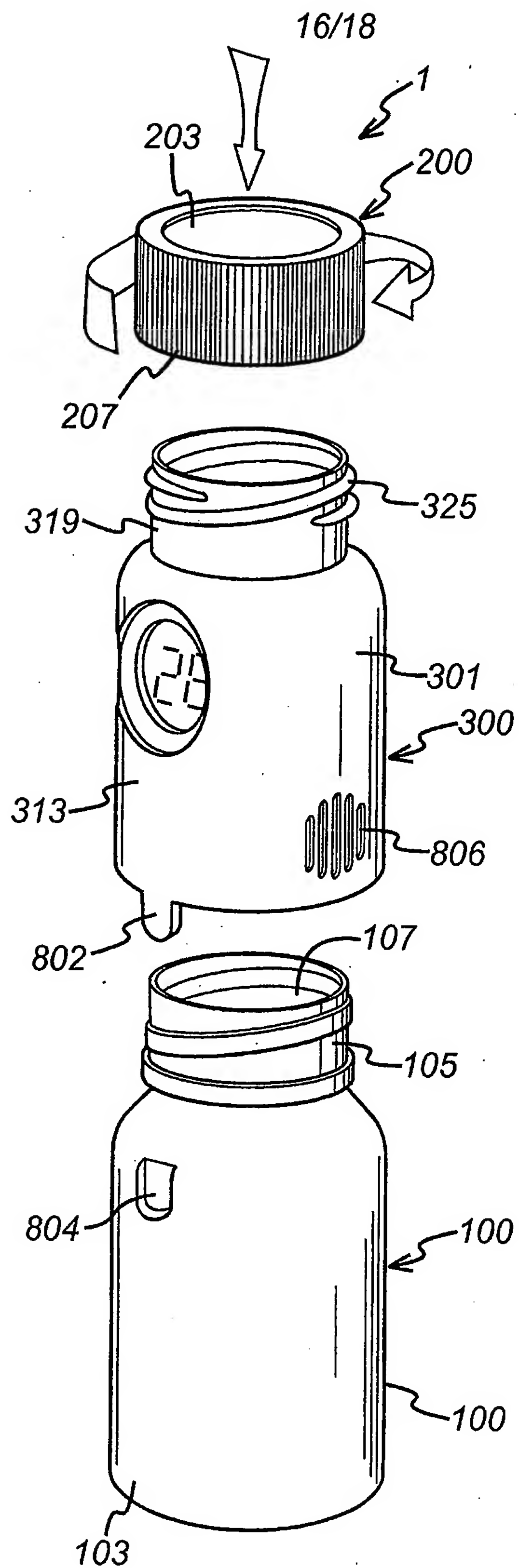
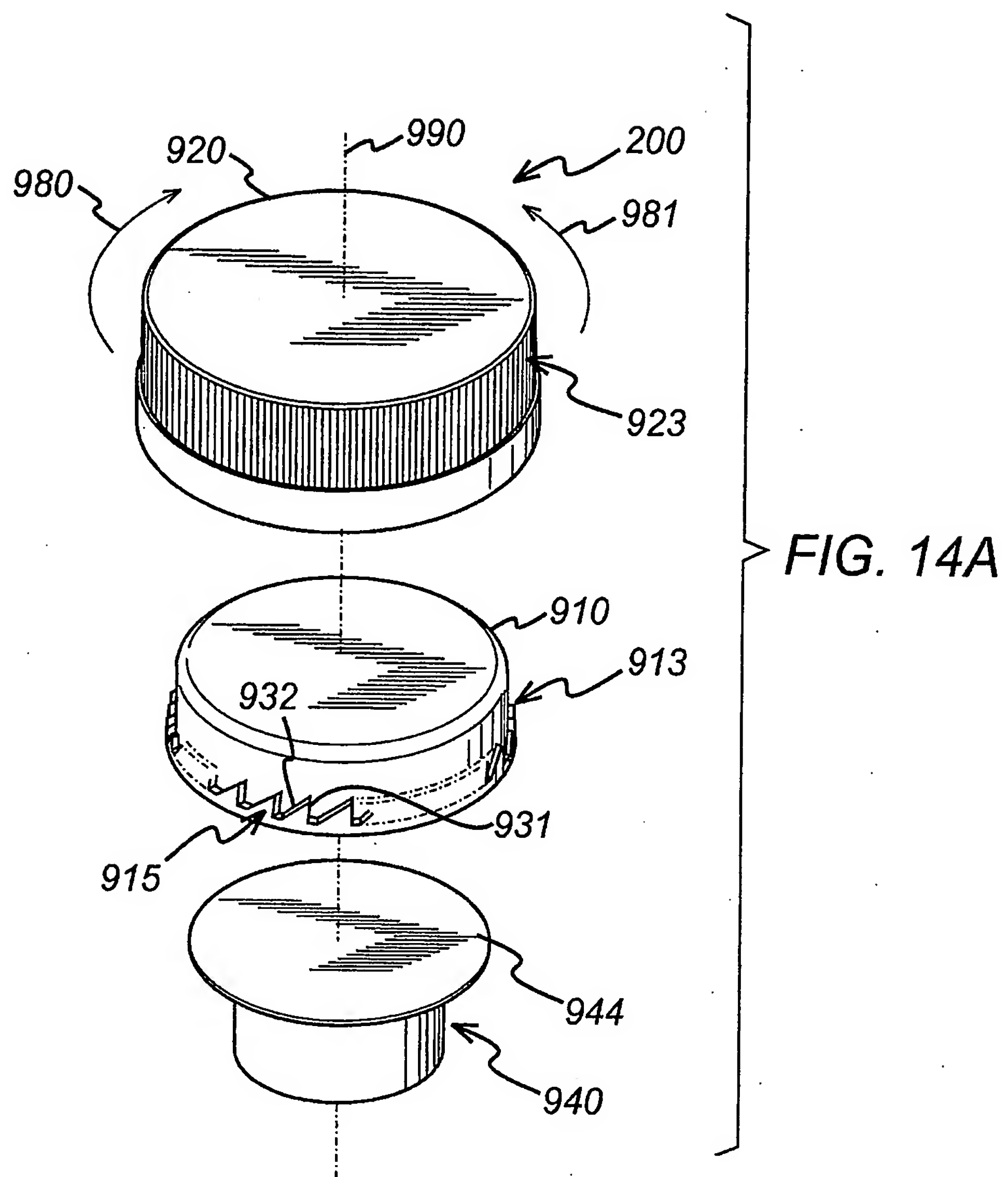
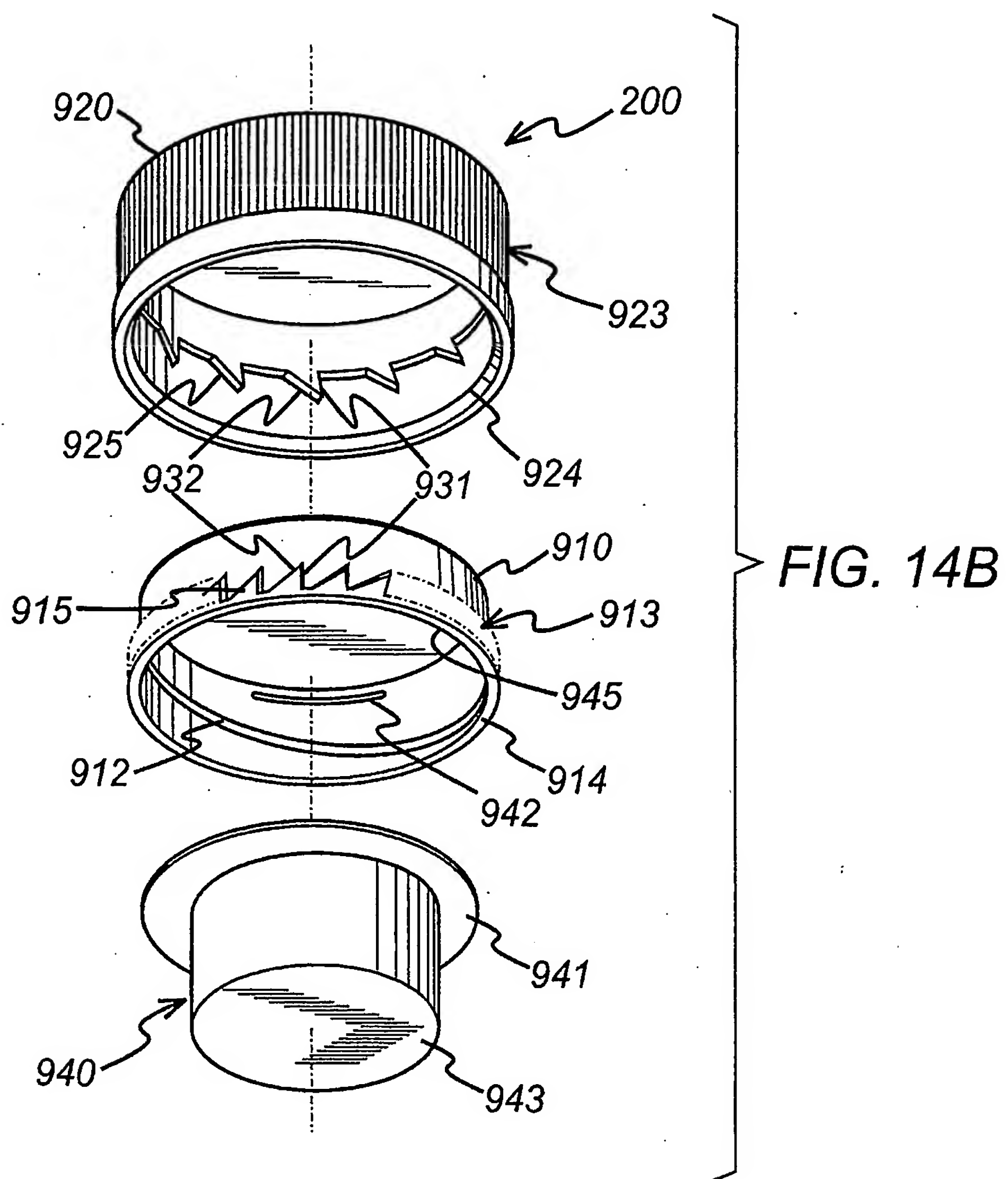


FIG. 13C

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/007818A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B65D83/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B65D A61J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 91 14 688 U (SPESSART GLAS GMBH, 8770 LOHR, DE) 25 March 1993 (1993-03-25) figures 1,2	1-6, 12-24, 26-32
X	US 4 653 668 A (GIBILISCO ET AL) 31 March 1987 (1987-03-31) figures 2,3,5,6	1-20,23, 26-31
X	WO 02/094684 A1 (WARNER-LAMBERT COMPANY; EVANS, CHRISTOPHER; GIEDA, CHRISTOPHER) 28 November 2002 (2002-11-28) page 8, line 20 - page 9, line 3 -/-	1-4, 7-10, 12-15, 19,21, 23,24, 26-31

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

1 February 2005

Date of mailing of the international search report

17/02/2005

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/007818

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 2 764 583 A1 (AIRSEC SA) 18 December 1998 (1998-12-18) figures 11,12 -----	12,21

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2004/007818

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 33, 34
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 6.2(a) PCT.
2. ☐ Claims Nos.:
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This International Searching Authority found multiple inventions in this International application, as follows:

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2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
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Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/007818

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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			EP 1395502 A1	10-03-2004
			JP 2004531318 T	14-10-2004
			US 2002175180 A1	28-11-2002
FR 2764583	A1	18-12-1998	NONE	

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